

RECEIVED

SEP 22 1992

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

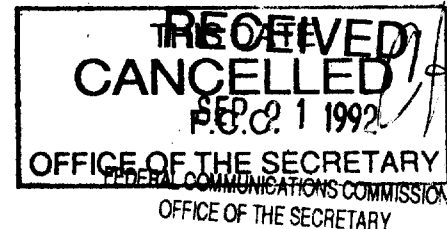
ORIGINAL  
FILE

In the Matter of the Petition of:

MOTOROLA SATELLITE COMMUNICATIONS, INC.

RM No. \_\_\_\_\_

For Amendment of Parts 2 and 25 of  
the Commission's Rules to Allocate  
Additional Spectrum for Use by Non-  
Geostationary Satellites Providing  
Mobile-Satellite Services.



PETITION FOR RULEMAKING

Motorola Satellite Communications, Inc. ("Motorola")  
hereby petitions the Commission to amend Parts 2 and 25 of the  
Rules to allocate additional spectrum above 1 GHz for use by low-  
earth orbiting ("LEO") satellite systems providing Mobile-  
Satellite Services ("MSS"). Specifically, the Commission is  
requested to add at least 10.5 MHz of spectrum in the Earth-to-  
Space direction in one or both of the following frequency bands:

|                 |   |
|-----------------|---|
| 1675-1710 MHz   | Mobile-Satellite Service (Earth to Space) |
| 1599.5-1610 MHz | Mobile-Satellite Service (Earth to Space) |

Motorola requests that the additional 10.5 MHz of  
proposed MSS spectrum be combined with the 1610-1616 MHz band  
that the Commission is proposing to allocate on a co-primary

No. of Copies rec'd  
List A B C D E

0 + 5

basis to MSS.<sup>1/</sup> The resulting 16.5 MHz of uplink spectrum could be paired with the 16.5 MHz of downlink spectrum in the 2483.5-2500 MHz band for the provision of MSS and RDSS. This would enable the Commission to assign the 10.5 MHz of spectrum in the 1616-1626.5 MHz band for bidirectional MSS and RDSS use, as proposed in the RDSS Notice of Proposed Rulemaking, without diminishing the amount of spectrum available for the provision of MSS using different uplink and downlink bands.

The Commission must act on this Petition expeditiously if Motorola and other LEO MSS applicants are to be able to compete in the emerging global personal and mobile communications services marketplace. Since Motorola first announced the development of its IRIDIUM™ system, Inmarsat and others have indicated an interest in developing potentially competing LEO MSS systems. Several of these foreign systems are not burdened by domestic regulatory requirements for obtaining construction and operating licenses.

#### I. INTRODUCTION AND SUMMARY

In its recently released RDSS Notice of Proposed Rulemaking, the Commission proposed new primary allocations in the 1610-1626.5 MHz and 2483.5-2500 MHz bands ("the RDSS bands") for MSS, including for use by LEO satellite systems. The Commission also proposed a secondary MSS allocation in the

---

<sup>1/</sup> See Notice of Proposed Rulemaking and Tentative Decision in ET Docket No. 92-28, FCC 92-358 (Sept. 4, 1992) ("RDSS Notice of Proposed Rulemaking").

1613.8-1626.5 MHz band, as well as various footnotes limiting power levels in the bands. These allocations are consistent with decisions reached at the 1992 World Administrative Radio Conference ("WARC-92").<sup>2/</sup>

In making these proposed allocations, the Commission recognized the significant new benefits to communications users that would be provided by LEO MSS systems, including universally available cellular-like service, radiolocation and navigation services. It further noted the substantial economies of global LEO operations over geostationary satellite ("GSO") systems for both system operators and users. Id. at ¶¶ 13,15.

Significantly, however, the Commission also recognized that the proposal to allocate 33 MHz of spectrum to MSS may not be sufficient to accommodate all of the LEO and GSO MSS applicants at their proposed levels of service. Id. at ¶ 18.

In this Petition, Motorola requests that an additional 10.5 MHz of spectrum be allocated for MSS uplinks in one of two bands. Motorola makes a prima facie case that it is technically feasible for current users of these bands to share this spectrum with MSS uplinks. Motorola further proposes that, after this spectrum is allocated, it be considered for assignment to the current LEO MSS applicants to alleviate congestion in the RDSS

---

<sup>2/</sup> The Commission has also proposed the establishment of an Advisory Committee to negotiate proposed rules appropriate to the provision of MSS in the RDSS bands. See Public Notice, DA 92-1085 (released Aug. 7, 1992). Motorola has filed Comments which generally support the establishment of such a committee subject to certain critical modifications in the Commission's proposed approach. See Comments of Motorola, CC Docket No. 92-166 (Sept. 14, 1992).

bands. Specifically, this 10.5 MHz could be assigned to the four LEO MSS applicants who have proposed to have their uplinks in the 1.6 GHz band and their downlinks in the 2.4 GHz band (hereinafter "dual band LEO MSS applicants").<sup>3/</sup> The Commission can permissibly assign this additional spectrum, in conjunction with the 1610-1616 MHz band, to the dual band LEO MSS applicants without accepting more applications.

This Petition incorporates the spectrum proposals previously identified by Motorola in its recently filed Petition for Expedited Action.<sup>4/</sup> Motorola believes that these proposals present constructive solutions to the current scarcity of spectrum both domestically and internationally for proposed LEO MSS systems.

---

<sup>3/</sup> Motorola's IRIDIUM™ system could not use this new spectrum on a non-interfering basis because both its uplinks and downlinks are in the same band.

<sup>4/</sup> On June 9, 1992, Motorola filed a Petition for Expedited Action with the Commission in ET Docket No. 92-28. In its Petition, Motorola demonstrated the strong public policy reasons for prompt action on the pending LEO MSS applications, including the promotion of U.S. competitiveness in LEO and MSS technologies and services, and the creation of thousands of jobs in this country. Specifically, Motorola identified two alternative spectrum solutions for accommodating all of the LEO MSS satellite applicants. Motorola pointed out that if the Commission were to adopt any one of these proposed solutions, licensing of all of the LEO MSS satellite proposals which comprise the current group of applicants could proceed without further delay or any substantial additional processing. See Petition for Expedited Action, File Nos. 9-DSS-P-91(87) & CSS-91-010, et al. (June 9, 1992). The Commission did not address Motorola's proposed MSS spectrum alternatives in its RDSS Notice of Proposed Rulemaking.

II.           THE PUBLIC INTEREST IN ALLOCATING SPECTRUM FOR MSS IN  
THE RDSS BANDS ALSO SUPPORTS ALLOCATING AN ADDITIONAL  
10.5 MHZ OF UPLINK SPECTRUM IN THE PROPOSED BANDS

As previously indicated, the 33 MHz of spectrum that would become available as a result of the RDSS Notice of Proposed Rulemaking will not be sufficient to accommodate the requests of all those who timely applied for MSS systems above 1 GHz. There are now six applicants vying for the limited spectrum available in the L- and S-bands. Putting aside AMSC's GSO application which is incompatible with existing international limitations on power levels in the RDSS bands, the fact still remains that not all of the LEO MSS systems can operate viable systems in the limited amount of spectrum currently proposed for MSS. The question the Commission faces is how to reconcile this difference between the demand for spectrum and the limited amount currently proposed for MSS.

Four of the five LEO MSS applicants propose to use the RDSS bands unidirectionally, i.e., they propose to use part or all of the 1610-1626.5 MHz band for uplinks and part or all of the 2483.5-2500 MHz band for downlinks. These four LEO MSS applicants have stated in filings to the Commission that they could share these bands by using homogeneous spread spectrum/CDMA

technologies.<sup>5/</sup> Furthermore, these LEO applicants believe that 33 MHz of spectrum is sufficient to meet their requirements.<sup>6/</sup>

The fifth LEO MSS applicant, Motorola, proposes to operate bidirectionally in the band from 1616-1626.5 MHz. This band was allocated for bidirectional use at WARC-92 and the Commission has proposed an identical domestic allocation in the RDSS Notice of Proposed Rulemaking. Motorola's system would use FDMA/TDMA modulation, and could not operate using CDMA or spread spectrum modulation techniques. In Motorola's view, this bidirectional allocation should be separated from the remainder of the MSS bands. This would leave 22.5 MHz of spectrum in the RDSS bands which other qualified LEO MSS applicants could share.

To facilitate the licensing process with the objective of expediting the provision of service to the public, Motorola proposes that 10.5 MHz of additional uplink spectrum be identified as replacement spectrum for the 10.5 MHz to be reserved for bidirectional MSS. This Petition identifies two bands from which 10.5 MHz could be allocated for MSS uplinks. This spectrum could be assigned to the four dual band LEO MSS applicants so that they would share a full 33 MHz of spectrum, equivalent to the total bandwidth currently available in the RDSS

---

<sup>5/</sup> It should be noted that Constellation's proposed system would operate on a FDMA/SCPC basis in the RDSS uplink band and would use a TDM, spread spectrum method in the entire RDSS downlink band. Constellation, however, has indicated its willingness to change its modulation scheme to an all CDMA design.

<sup>6/</sup> See, e.g., Comments of Constellation (Dec. 18, 1991) at 2-3; Comments of TRW on Constellation's Application (Dec. 18, 1991) at 4; Petition to Deny or Dismiss and Comments of Ellipsat (Dec. 18, 1991) at 12-14.

bands. Under both of these options, the 1610-1616 MHz band would continue to be used for MSS uplinks and the 2483.5-2500 MHz band for MSS downlinks for the dual band LEO MSS applicants, while maximum use would be made of the 1616-1626.5 MHz band by assigning it to Motorola for bidirectional TDMA/FDMA operations.

A. Option 1 -- The 1675 to 1710 MHz Band

1. Description

As a result of WARC-92, the 1675-1710 MHz band is divided into three segments in the Table of Frequency Allocations -- 1675-1690 MHz, 1690-1700 MHz, and 1700-1710 MHz. The 1675-1690 MHz band is now allocated worldwide on a co-primary basis to the Meteorological-Satellite (downlinks), Meteorological Aids, Fixed, and Mobile (except aeronautical mobile) Services.<sup>7/</sup> In Region 2 this band will also be allocated on a co-primary basis to the MSS for uplinks subject to RR 735A. This footnote provides that MSS stations in this band "shall not cause harmful interference to, nor constrain the development of, the meteorological-satellite and meteorological aids services (see Resolution COM 4/X) and the use of this band shall be subject to the provisions of Resolution COM 5/8."<sup>8/</sup>

The 1690-1700 MHz band is allocated worldwide on a co-primary basis to the Meteorological-Satellite Service ("Metsat")

---

<sup>7/</sup> See International Telecommunications Union, Addendum and Corrigendum to the Final Acts of the World Administrative Radio Conference, Malaga-Torremolinos (1992), at A&C p.14.

<sup>8/</sup> Id. at A&C pp. 14-15.

for downlinks and to the Meteorological Aids Service ("Metaid"). Again, as a result of WARC-92, in Region 2 the band has been allocated on a co-primary basis to MSS uplinks subject to RR 735A requiring protection of Metsats and Metaids.<sup>9/</sup>

Lastly, the 1700-1710 MHz band is allocated worldwide on a co-primary basis to the Metsat (downlinks), and Fixed and Mobile (except Aeronautical Mobile) Services. As a result of WARC-92, this band has been allocated to MSS for co-primary uplinks in Region 2 subject to RR 735A.<sup>10/</sup>

Thus, the entire 35 MHz of spectrum from 1675 to 1710 MHz was allocated at WARC-92 in Region 2 to MSS uplinks on a co-primary basis subject to RR 735A (requiring protection of Metsats and Metaids). In adopting this allocation at WARC-92, the apparent intention was to pair this 35 MHz uplink band with the allocation at 1492-1525 MHz for MSS downlinks. The United States, however, took an exception to the proposed use of the 1492-1525 MHz band for an MSS downlink allocation. New RR 722B states that this downlink band is not allocated to MSS in the

---

<sup>9/</sup> The Fixed and Mobile (except Aeronautical Mobile) Services have secondary allocations in this band in Region 1. Final Acts at A&C p. 14. The Earth Exploration-Satellite Service may use the 1690-1700 MHz band for downlinks worldwide on a secondary basis pursuant to RR 671. Certain countries around the world may use the 1690-1700 MHz band for Fixed and Mobile (except Aeronautical Mobile) Services on a primary basis pursuant to RR 740 and RR 741. Certain countries in Region 3 may use the 1690-1700 MHz band for Fixed and Mobile (except Aeronautical Mobile) Services on a secondary basis pursuant to RR 742.

<sup>10/</sup> Final Acts at A&C p.16. The Earth Exploration-Satellite Service may use the 1700-1710 MHz band for downlinks worldwide on a secondary basis pursuant to RR 671. Certain countries in Region 3 may use the 1700-1710 MHz band for Space Research (space-to-Earth) on a primary basis pursuant to RR 743.

United States, but to the Fixed and Mobile Services on a primary basis. It is Motorola's understanding that the U.S. does not intend that this band be used for MSS downlinks because the band is used in this country for Aeronautical Telemetry. See RDSS Notice of Proposed Rulemaking, at ¶ 16 n.15.

## 2. Technical Feasibility of Sharing

Motorola believes that LEO MSS satellite system uplinks can co-exist with the primary occupants of these bands, i.e., the Metsat and Metaid Services, in accordance with RR 735A. While such sharing is premised on LEO MSS systems having certain capabilities and characteristics (i.e., dynamic channel assignment, position location, and central control stations), Motorola understands that all of the dual band LEO MSS satellite systems do have such capabilities. Dynamic channel assignment is necessary from a spectrum efficiency standpoint. Further, all LEO MSS system applicants assert in their applications that they will have RDSS/position location capability and that they will utilize central control stations.<sup>11/</sup>

---

<sup>11/</sup> See Ellipsat/Ellipso I system application (Nov. 2, 1990) at 18-21 (RDSS/position determination services), 5, 8 (ground control station), 11-12 (dynamic channel assignment); Constellation system application (June 3, 1991) at 10 (position determination and position reporting services), 8 (technical operational control center which, among other things, will be responsible for optimizing channel assignments); LQSS system application (June 3, 1991) at 26 (RDSS offered on stand-alone basis or in combination with messaging and voice services), 103-104 (network coordination gateways and network control center), 152-55 (channel assignments made by network coordination gateway); TRW system application (June 1991) at 16 (RDSS services), 48 (ground stations), 33-34, 49-50 (best user channel assignment selected by ground station).

The fact that LEO MSS satellite systems will have these capabilities and characteristics forms the basis for the attached technical paper prepared by Motorola and entitled "Sharing of the 1675-1710 MHz Band By Meteorological Satellite, Meteorological Aids and Low Earth Orbit Mobile Satellite Systems." As explained therein, such sharing can be accomplished by the establishment of protection zones around Metsat and Metaid receiving terminals in which LEO MSS subscriber units would be precluded from transmitting on certain frequencies.

The reason this sharing technique would be feasible is two-fold. First, the locations and characteristics of the Metsat and Metaid terminals are known. Second, the LEO MSS systems would be able to identify the location of subscriber units through their RDSS/position location capabilities. Thus, when a LEO subscriber unit is in the vicinity of an operational Metsat or Metaid terminal, either the MSS subscriber unit or the system central control stations will determine its type, frequency, time of operation and protection zone area, and use or assign frequencies that will not cause harmful interference to the Metsat or Metaid terminal.

The one class of Metsat terminals that are too numerous for protection zones to be feasible (i.e., Weather Facsimile or WEFAX) could be protected simply by not using the frequencies on which those Metsat terminals operate (i.e., the 200 kHz band centered on 1691 MHz). When compared to the 35 MHz newly allocated to MSS in this band, it is obvious that a 200 kHz

exclusion would have no significant impact on LEO MSS system capability.

Lastly, the attached technical paper notes that an important WARC-92 directed sharing criteria is to avoid constraining the development of Metsat or Metaid services. In this regard, since the LEO MSS systems would have communication with central control stations, any changes to the Metsat or Metaid systems can be coordinated so as not to constrain Metsat or Metaid system development.

It appears that the proposed dual band LEO MSS applicants could share the 1675-1710 MHz band with other authorized users as well. These LEO MSS systems would need to coordinate the use of this spectrum with existing Fixed and Mobile Services using the band. There are few commercial fixed and mobile operations in this band. A review of the FCC's files conducted for Motorola by Comsearch indicates that there are only 27 commercial systems registered in the United States to provide fixed (7), mobile (14), or radiolocation (6) services in the 1675-1710 MHz band. Motorola has also searched the ITU/IFRB's data base and found that in Region 2, there are no registered mobile stations and only six or eight registered fixed stations in this band outside the United States.<sup>12/</sup>

---

<sup>12/</sup> Depending on whether or not three registered Canadian systems are one and the same system or different systems, there are either six or eight fixed stations.

B. Option 2 -- The 1599.5-1610 MHz Band

1. Description

Under this proposal, MSS uplinks would be permitted in the 10.5 MHz of spectrum adjacent to the lower end of the primary RDSS uplink band (i.e., 1599.5-1610 MHz). This option would provide 27 MHz of contiguous spectrum for LEO MSS uplinks

The 1559-1610 MHz band currently is allocated to the Aeronautical Radionavigation Service and Radionavigation-Satellite Service for downlinks on a co-primary basis in Region 2.<sup>13/</sup> Since the international Table of Frequency Allocations does not provide for MSS use of the 1599.5-1610 MHz band, implementation of this proposal would be pursuant to RR 342, which permits operation in any band without an allocation in the Table of Frequency Allocations provided that interference is not caused to stations operating in accordance with the ITU Regulations.

2. Technical Feasibility of Sharing

The primary occupant of the 1599.5-1610 MHz band is the Russian Glonass system. The four dual band LEO MSS applicants have previously stated that they can share spectrum with Glonass. The Glonass system will operate up to 1616 MHz pursuant to RR

---

<sup>13/</sup> Pursuant to a number of footnote allocations, the 1559-1610 MHz band, or certain portions thereof, is also available to the Fixed Service in certain countries (on a primary basis in some and a secondary basis in others), the Aeronautical Radionavigation Service on a primary basis in Sweden, and the Aeronautical Mobile Service in certain countries (on a primary basis in some and a secondary basis in others).

732.<sup>14/</sup> Under RR 731X adopted at WARC-92, MSS and RDSS uplinks in the 1610-1626.5 MHz band are subject to the coordination and notification procedures set forth in Resolution COM 5/8 and may not produce an E.I.R.P. density in excess of -15 dBW/4kHz in the part of the band used by systems operating in accordance with the provisions of RR 732, unless otherwise agreed to by the affected administrations.<sup>15/</sup> RR 731X also provides that MSS stations may not cause harmful interference to, or claim protection from, stations in the Aeronautical Radionavigation Service, stations operating in accordance with the provisions of RR 732, and stations in the fixed service operating in accordance with the provisions of RR 730.<sup>16/</sup>

During the course of WARC-92, the four dual band LEO MSS applicants took the position that they could operate in the 1610-1616 MHz band without causing harmful interference to Glonass by meeting the E.I.R.P. density limits set forth in RR 731X. Thus, it follows that these same LEO MSS systems should be able to share the spectrum from 1599.5-1610 MHz equally well with

---

<sup>14/</sup> This footnote provides as follows:

The band 1610-1626.5 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities. Such satellite use is subject to agreement obtained under the procedure set forth in Article 14.

<sup>15/</sup> Final Acts at A&C p.11. RR 731X sets forth a less stringent E.I.R.P. density limit for those parts of the band where Aeronautical Radionavigation systems are not currently coordinated.

<sup>16/</sup> Id.

Glonass, as well as with any future Aeronautical Radionavigation-Satellite system in the band, by conforming to RR 731X.

Meeting this technical standard in the 1599.5-1610 MHz band would not pose any additional burden on those MSS applicants ultimately awarded licenses for operation in this band because they must comply with the -15 dBW/4kHz limit anyway as a condition of operating in the 1610-1616 MHz band. Given this sharing capability, Motorola believes that it should be technically feasible for LEO RDSS/MSS subscriber units to transmit within this 10.5 MHz of spectrum without causing harmful interference consistent with RR 342.<sup>17/</sup>

III.        THE COMMISSION COULD ASSIGN THIS NEW SPECTRUM  
TO EXISTING LEO MSS APPLICANTS WITHOUT INVITING  
NEW APPLICATIONS FROM OTHER PARTIES

A.        The Commission Can Establish Rules Which  
Limit the Eligibility for New Spectrum  
to Certain Applicants

Under the Communications Act of 1934, as amended, the Commission is broadly empowered to act consistent with the "public convenience, interest, or necessity." Among the powers granted the Commission is the allocation of specific parts of the radio spectrum to uses such as satellite transmissions. See 47 U.S.C. § 303 (1988).

---

<sup>17/</sup> It should be noted that the use of the 1599.5-1610 MHz band by MSS raises even fewer concerns about potential interference than the 1610-1616 MHz band because, unlike the latter band, there are no radioastronomy allocations in the 1599.5-1610 MHz band.

Pursuant to this authority, it is well-settled that the Commission can utilize its rulemaking power to alter rules which govern or impact pending applications. In United States v. Storer Broadcasting Co., 351 U.S. 192, 202 (1956), the Supreme Court held that the Commission by general rule, can establish substantive eligibility criteria for applicants after the applications had been filed, thereby retroactively rendering a current applicant ineligible.<sup>18/</sup> Observing that "[t]he growing complexity of our economy induced the Congress to place regulation of businesses like communication in specialized agencies with broad powers," the Court recalled its previous attention to the "necessity for flexibility" in rule-making. Storer, 351 U.S. at 203-04.<sup>19/</sup>

On a number of occasions, the Commission has utilized its powers under the Communications Act to limit the eligibility

---

<sup>18/</sup> This finding was consistent with the Court's previous pronouncement in Ashbacker Radio Corp. v. FCC, 326 U.S. 327, 333 (1945), that Section 309 of the Communications Act requires the Commission to hold a comparative hearing for all "bona fide" mutually exclusive applications which present substantial and material questions of fact. The Storer Court cited Ashbacker for its implicit approval of the Commission's power to promulgate rules governing applicants' eligibility. Storer, 351 U.S. at 202 n.11. The Ashbacker Court had observed that "[a]pparently no regulation exists which, for orderly administration, requires an application . . . to be filed within a certain date." Ashbacker, 326 U.S. at 333 n.9.

<sup>19/</sup> See also Hispanic Info. & Telecommunications Network, Inc. v. FCC, 865 F.2d 1289, 1294 (D.C. Cir. 1989); Maxcell Telecom Plus, Inc. v. FCC, 815 F.2d 1551, 1554-55 (D.C. Cir. 1987); Amendment of Parts 2, 22 and 25 of the Commission's Rules to Allocate Spectrum for and to Establish Other Rules and Policies Pertaining to the Mobile Satellite Service for the Provision of Various Common Carrier Services (Tentative Decision), 6 FCC Rcd. 4900, 4903 ¶ 15 (1991) ("MSS Tentative Decision") on remand from Aeronautical Radio, Inc. v. FCC, 928 F.2d 428 (D.C. Cir. 1991) aff'd, 7 FCC Rcd. 266 (1992) ("MSS Final Decision").

of applicants for various services and frequencies to existing permittees and licensees. See, e.g., Rainbow Broadcasting Co. v. FCC, 949 F.2d 405, 408-11 (D.C. Cir. 1991) (upholding FCC policy allowing television licensees to exchange channels without exposing licensees to competing applications); Potential Uses of Certain Orbital Allocations by Operators in the Direct Broadcast Satellite Service (Notice of Proposed Rule Making), 4 FCC Rcd. 6306, 6307 ¶ 5 (1989) (proposing accepting applications for direct broadcast satellite ("DBS") service from western orbital positions only from existing DBS permittees and licensees); Amendment of the Commission's Rules Regarding Modification of FM and TV Authorizations to Specify a New Community of License (Report and Order), 4 FCC Rcd. 4870, 4872-73 ¶¶ 22-24 (1988) (allowing permittees and licensees to seek new community of license without opening up process to new applicants).

More significantly, the Commission also has limited eligibility to apply for frequency spectrum to applicants who had already filed for another band. Amendment of Parts 2, 73, and 90 of the Commission's Rules and Regulations to Allocate Additional Channels in the Band 470-512 MHz for Public Safety and Other Land Mobile Services (Report and Order), Gen. Docket No. 84-902, slip op. at 14 ¶ 51 (1985). In that proceeding, six and one-half years after the cut-off date for applications for a new television broadcast channel to serve Ventura County, California, the Commission reallocated the channel to land mobile public safety service in Los Angeles. Id. at 12-13, ¶¶ 45-50. Responding to an applicant's concern about "having to start the

comparative process over with a new cut-off date for applications," the Commission stated that it would not "penalize the current Channel 16 applicants for the time and effort expended thus far in prosecuting their applications." Id. at 14 ¶ 51. The Commission thus concluded, "[a]fter carefully weighing the various policy considerations voiced by commenters in this rulemaking proceeding," that "the public interest fully justifies limiting eligibility for any newly allocated Ventura channel to the displaced Channel 16 applicants." Id.

B. The Commission Can Also Change Spectrum Allocations After Accepting Applications Pursuant to a Cut-Off Notice

On several occasions, the Commission has modified spectrum allocations after accepting applications pursuant to a cut-off date. For example, in the original MSS proceedings, the Commission modified its proposed spectrum allocation after receipt of twelve MSS applications filed in response to a cut-off date.<sup>20/</sup> There, the Commission altered its allocation decision to preclude aeronautical mobile-satellite (R) service ("AMSS(R)") systems from operating on a co-primary basis in the upper L-bands. The Commission observed that "[t]he preclusion of a separate AMSS(R) system in the co-primary bands arises as a

---

<sup>20/</sup> Amendment of Parts 2, 22, and 24 of the Commission's Rules to Allocate Spectrum for, and to Establish Other Rules and Policies Pertaining to the Use of Radio Frequencies in a Mobile Satellite Service for the Provision of Various Common Carrier Services, 4 FCC Rcd. 6016, 6022 ¶¶ 39-41 (1989) ("MSS Spectrum Order").

consequence of the rules adopted in this proceeding, not the cut-off date." MSS Spectrum Order at 6022 ¶ 39.

The Commission refused in that case to read the Supreme Court's decision in Ashbacker, which concerned the right of "bona fide" applicants to a comparative hearing, as "requiring the Commission to reopen cut-off periods for spectrum whenever it modifies the rules governing that spectrum so as to enhance in any way the rights of any applicants who may have applied to use the spectrum." Id. at 6028 n.65. Furthermore, "to the extent that the Aviation Parties may be arguing more generally that the Commission cannot apply new spectrum allocation rules to pending applications, we reject any claim that this constitutes impermissible 'retroactive' rule making." Id. at 6022 ¶ 41 (footnotes omitted). Citing Storer, the Commission stated that "it is clear that the application of new FCC rules to pending applications is permissible under the Communications Act." Id. at 6022 ¶ 41 & 6028 n.69.

In another proceeding involving cellular radio frequencies, the Commission similarly adopted a frequency allocation which had not been proposed in the Commission's rule-making notice.<sup>21/</sup> In that case, the Commission explicitly stated that it was "utilizing the 824-825/869-870 MHz bands, which were not proposed in the Notice in GEN Docket No. 84-1231 for cellular expansion, rather than the 849-850/894-895 bands,

---

<sup>21/</sup> Amendment of Parts 2 and 22 of the Commission's Rules Relative to Cellular Communications Systems (Report and Order), Gen. Docket No. 84-1231, 2 FCC Rcd. 1825, 1828 ¶ 26 (1986).

which were proposed."<sup>22/</sup> The notice in that proceeding "tentatively propose[d] to amend Parts 2 and 22 of the Commission's Rules to reallocate twelve megahertz of spectrum in the 845-851 and 890-896 MHz bands for use by common carrier cellular radiotelephone systems" in response to a petition filed for reallocation of those frequencies.<sup>23/</sup> The Commission observed that such a frequency change should have "little or no impact on cellular users," since the bands were adjacent to the current cellular allocation.<sup>24/</sup>

C. There Are Substantial Public Interest Factors Supporting Utilization of Additional Spectrum for LEO MSS Applicants

The public interest standard is "'a supple instrument for the exercise of discretion'" by the Commission, permitting it "to implement its view . . . so long as that view is based on consideration of permissible factors and is otherwise reasonable." MSS Tentative Decision, 6 FCC Rcd. at 4903 ¶ 17 (quoting FCC v. Pottsville Broadcasting Co., 309 U.S. 134, 138 (1940) and citing FCC v. WNCN Listeners Guild, 450 U.S. 582, 594 (1981)).<sup>25/</sup>

---

<sup>22/</sup> Id.

<sup>23/</sup> Additional Frequency Allocation for Cellular Systems (Notice of Proposed Rulemaking), 50 Fed. Reg. 3809, 3809 ¶ 1 (1985).

<sup>24/</sup> Id.

<sup>25/</sup> In its MSS Final Decision, the Commission clarified that the considerations justifying reimposition of the consortium rule as an alternative to holding comparative hearings did not apply to other multiple applicant satellite proceedings. MSS Final Decision, 7 FCC Rcd. at 277 n.77. While the imposition of a  
(continued...)

There are substantial public interest benefits, such as the avoidance of extensive and unnecessary delays in the processing of new and innovative services, which support the acceptance of one of the alternatives proposed herein for processing the current group of LEO MSS applicants. Either one of the suggested options would allow the Commission to license all five of the pending LEO MSS applicants in an expeditious manner and without the concomitant delays associated with comparative hearings. The marketplace would then become the true arbiter of which of the proposed systems will succeed and which ones will fail.

As with other satellite systems, the construction and launch of a LEO MSS system involves "huge costs and long lead time."<sup>26/</sup> Motorola does not believe, however, that the spectrum options proposed herein would require significant adjustment to any of the dual band LEO MSS applicants'

---

<sup>25/</sup> (...continued)  
consortium is not at issue here, the public interest considerations are instructive. An important consideration was the long lead time required for satellite construction and launch and the need to avoid substantial delays in the provision of satellite service. MSS Tentative Decision, 6 FCC Rcd. at 4904 ¶¶ 19-20. Faced with a request to reopen the cut-off period in that case, the Commission observed that "reopening the MSS cutoff to any number of new applications, with its accompanying delay, would prevent an expeditious resolution of the MSS licensing question." Id. at 4914 ¶ 73.

<sup>26/</sup> Amendment to the Commission's Rules to Allocate Spectrum for, and to Establish Other Rules and Policies Pertaining to, a Radiodetermination Satellite Service, 60 Rad.Reg. (P&F) 2d 298, 308 ¶ 23 (1986).

systems.<sup>27/</sup> Indeed, these applicants have already indicated that certain changes to their systems would be necessary for them to share the same spectrum.

IV.           THE PROPOSED ALLOCATIONS WOULD SATISFY  
              THE IMMEDIATE NEEDS OF ALL OF THE LEO  
              MSS APPLICANTS FOR SPECTRUM

As previously indicated, the addition of just 10.5 MHz of uplink MSS spectrum in the 1.6 GHz range would satisfy all of the immediate demands for spectrum of the five LEO applicants proposing MSS systems. The four dual band LEO MSS applicants have repeatedly stated that they could coexist in 33 MHz of spectrum using CDMA spread spectrum techniques. The proposals set forth herein would provide these applicants with 16.5 MHz of uplink and downlink spectrum in the 1.6 GHz and 2.4 GHz bands, respectively. The 6 MHz of uplink spectrum and all 16.5 MHz of downlink spectrum in the RDSS bands would be available on a worldwide co-primary basis for MSS and RDSS use. The additional 10.5 MHz of uplink MSS spectrum made available as a result of this proceeding could be used throughout Region 2 immediately, and possibly on a worldwide basis after a future WARC. All of these allocations would be consistent with the proposals of the

---

<sup>27/</sup> The fact that Motorola suggested the reallocation also should not deter the Commission from acting in the public interest. As the Commission has stated, its "ability to act in furtherance of the public interest does not depend upon who requested Commission action or upon who brought to our attention the information on which we base our determination." Amendments to the Television Table of Assignments to change Noncommercial Educational Reservations, 59 Rad.Reg. (P&F) 2d 1455, 1462 ¶ 25 (1986).

four dual band LEO MSS applicants to operate their systems initially only in Region 2.<sup>28/</sup>

The remaining 10.5 MHz of uplink spectrum in the RDSS band is ideally suited for Motorola's bidirectional system. Motorola is the only LEO MSS applicant that has proposed a first generation system which would offer service continuously to every point on the globe. The 1616-1626.5 MHz band is the only spectrum which could accommodate bidirectional operations on such a worldwide basis.

V. THE COMMISSION MUST ACT EXPEDITIOUSLY  
ON THIS PETITION FOR RULEMAKING

The Commission must act on this Petition expeditiously if Motorola and other LEO MSS applicants are to be able to compete in the emerging global personal and mobile communications services marketplace. Since Motorola first announced the development of its IRIDIUM™ system in June 1990, several other

---

<sup>28/</sup> See Ellipsat/Ellipso I system application (Nov. 2, 1990) at 7 (initial service only to U.S.), space station applications (Nov. 2, 1990) at 2 (service to be provided to CONUS, U.S. territories and domestic offshore points), Technical Clarification and Erratum (Jan. 30, 1991) at 7; Ellipso II system application (June 1991) at 23 (primarily designed for coverage of U.S. but expands coverage to Canada and other Northern Hemisphere points as well as Southern Hemisphere and other international points); Constellation system application (June 3, 1991) at 8 (five gateway earth stations in CONUS and additional gateways in Alaska, Hawaii and Puerto Rico/Virgin Islands), Appendix L (space station application) at 2 (service will be provided to all 50 states as well as U.S. territories, coastal waters and other domestic offshore points); LQSS system application (June 3, 1991) at 1 (system initially would provide service to the U.S.), 21 (applying now for a license to provide service only within the U.S.); TRW system application at 5 (service to be provided initially to North America only), 34 (initially four gateway ground stations to be located on U.S. west coast, U.S. east coast, Alaska, and Hawaii).

U.S., foreign and international concerns have expressed an interest in LEO technologies for the provision of MSS and RDSS. For example, soon after the filing of the IRIDIUM™ system application, Italian and Russian interests announced their intent to develop LEO satellite systems to provide mobile satellite services.<sup>29/</sup> Over the past year, Inmarsat has also promoted its "Project 21," which might include a constellation of LEO satellite systems providing land mobile satellite services throughout the world. In this regard, Inmarsat has filed with the International Frequency Registration Board ("IFRB") for the proposed use of virtually all of the new spectrum allocated to MSS at WARC-92. In addition, other nations, including Canada and Tonga, have filed Advanced Publication information at the IFRB for satellite systems in the RDSS bands. Several of these systems are not burdened by domestic regulatory requirements for obtaining construction and operating licenses.

Motorola has also proposed that the Commission consider these alternative spectrum proposals in its negotiated rulemaking proceeding relating to the provision of MSS in the RDSS bands. Prompt consideration of this Petition would facilitate inclusion of such spectrum alternatives onto the workplan of any such Advisory Committee that is formed to consider technical issues involving LEO MSS systems.

---

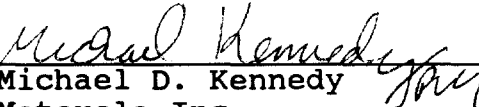
<sup>29/</sup> See, e.g., "Italspazio Studies Analogue to Iridium System," Space News at 6 (Feb. 18-24, 1991) ("We [will] start from the concepts and requirements published by Motorola on [the Iridium] project and then try to assess the feasibility on a European scale of something which could be quite different from Iridium").


VI. CONCLUSION

For the foregoing reasons, the Commission should adopt the allocation proposals set forth in this Petition.

Respectfully submitted,

MOTOROLA SATELLITE  
COMMUNICATIONS, INC.

  
Michael D. Kennedy  
Motorola Inc.  
1350 I Street, N.W.  
Suite 400  
Washington, D.C. 20005  
(202) 371-6900

  
Philip L. Malet  
Steptoe & Johnson  
1330 Connecticut Avenue, N.W.  
Washington, D.C. 20036  
(202) 429-6239

James G. Ennis  
Fletcher Heald & Hildreth  
1225 Connecticut Ave., N.W.  
Suite 400  
Washington, D.C. 20036  
(202) 828-5782

Its Attorneys

September 22, 1992

TECHNICAL PAPER

SHARING OF THE 1675-1710 MHZ BAND  
BY METEOROLOGICAL SATELLITE, METEOROLOGICAL AIDS  
AND LOW EARTH ORBIT MOBILE SATELLITE SYSTEMS